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ABSTRACT

This guide is intended for use in a course to help students become familiar with computer disk operating systems and the applications of various types of computer software. The first third of the guide contains the following: a profile of the critical skills required for the Canadian work force, a flowchart of the recommended sequence of studies for business education courses, the rationale for a course in software applications, evaluation criteria, time allotments, and the goals and objectives of each of the seminar's five units. The remainder of the guide consists of outlines for instructional units on the following topics: disk operating systems, spreadsheets, databases, integrated packages, and data communications. Each unit outline contains a unit goal and objectives correlated with recommended instructional methods. Appended are examples of spreadsheets and a list of practical activities for use in exploring and learning about databases. A 32-item bibliography of texts, educational versions of application programs, text resources and courseware (spreadsheets, databases, and integrated software) concludes the guide. (MN)

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Software Applications 30S

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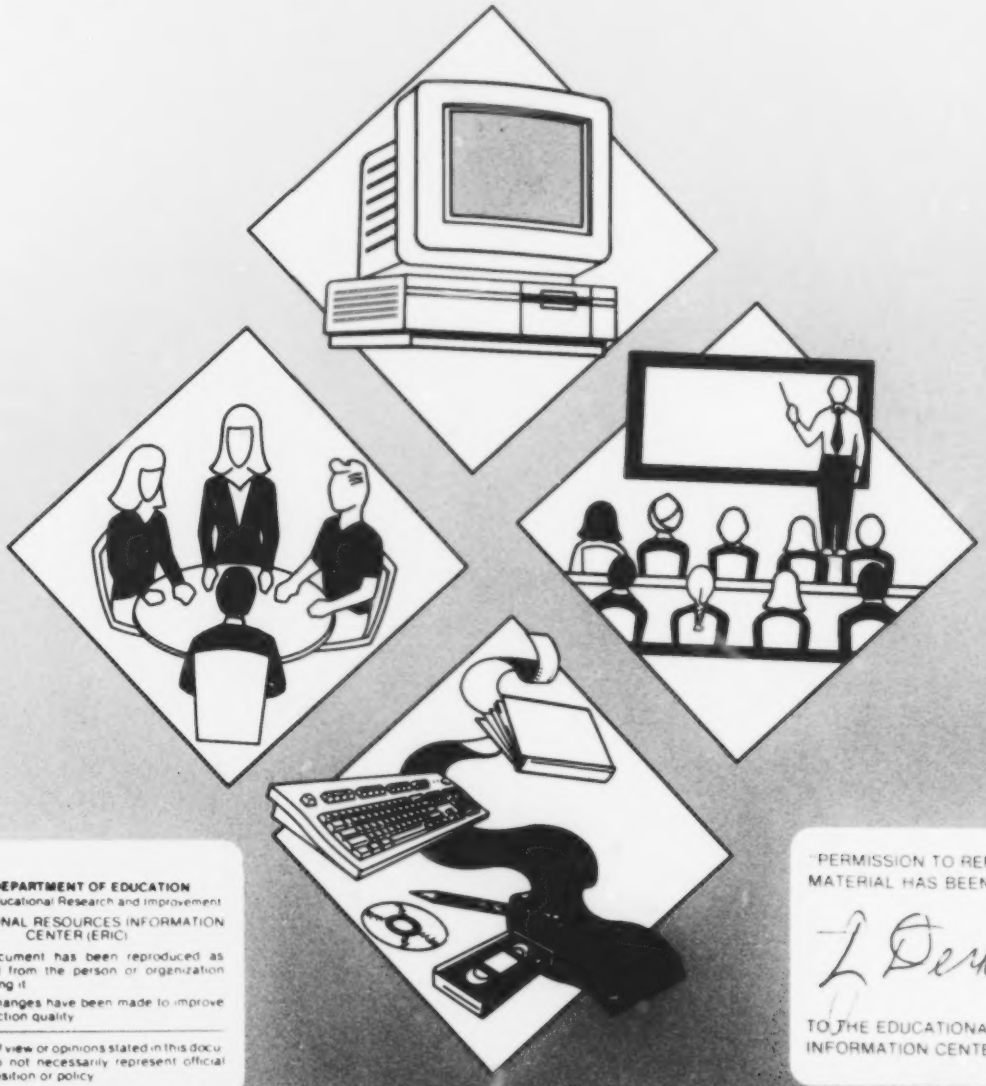

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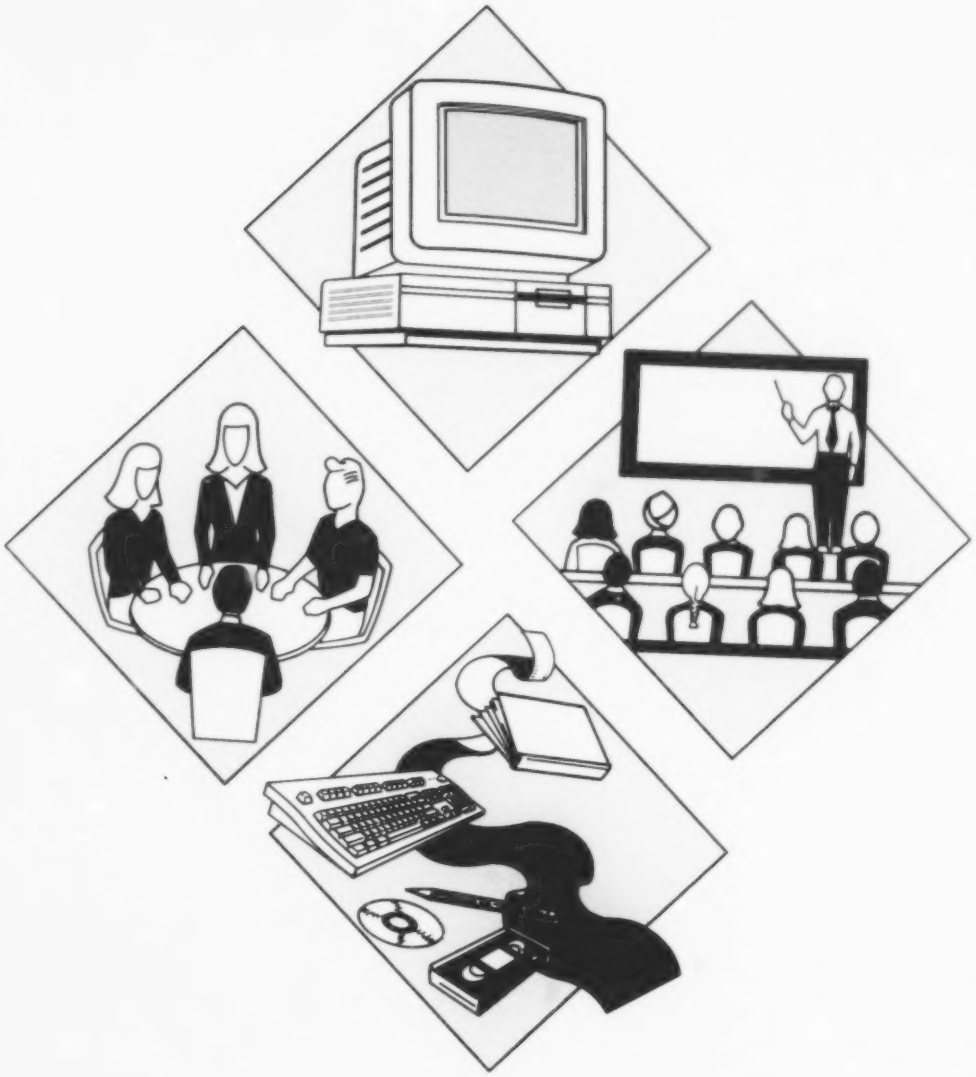

Interim Guide

Manitoba
Education
and Training

ISBN 0-7711-1142-8

SOFTWARE APPLICATIONS 30S

This guide replaces, in part, the Data Processing 202 and 302 guides of 1982, and becomes effective September, 1993. The contents have been developed as part of the review of the Business Education cluster of courses which are affected by computer technology.

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EMPLOYABILITY SKILLS PROFILE: The Critical Skills Required of the Canadian Workforce

Academic Skills

Those skills which provide the basic foundation to get, to keep, and to progress on a job and to achieve the best results.

Canadian employers need people who are able to

Communicate

- Understand and speak the languages in which business is conducted
- Listen to understand and learn
- Read, comprehend, and use written materials, including graphs, charts, and displays
- Write effectively in the languages in which business is conducted

Think

- Think critically and act logically to evaluate situations, solve problems, and make decisions
- Understand and solve problems involving mathematics and use the results
- Use technology, instruments, tools and information systems effectively
- Access and apply specialized knowledge from various fields, e.g., skilled trades, technology, physical sciences, arts and social sciences

Learn

- Continue to learn for life

Personal Management Skills

The combination of skills, attitudes and behaviours required to get, to keep, and to progress on a job and to achieve the best results.

Canadian employers need people who demonstrate

Positive Attitudes and Behaviours

- Self-esteem and confidence
- Honesty, integrity, and personal ethics
- A positive attitude toward learning, growth, and personal health
- Initiative, energy, and persistence to get the job done

Responsibility

- Ability to set goals and priorities in work and personal life
- Ability to plan and manage time, money, and other resources to achieve goals
- Accountability for actions taken

Adaptability

- Positive attitudes toward change
- Recognition of and respect for people's diversity and individual differences
- The ability to identify and suggest new ideas to get the job done – creativity

Teamwork Skills

Those skills needed to work with others on a job and to achieve the best results.

Canadian employers need people who are able to

Work with Others

- Understand and contribute to the organization's goals
- Understand and work within the culture of the group
- Plan and make decisions with others and support the outcomes
- Respect the thoughts and opinions of others in the group
- Exercise "give and take" to achieve group results
- Seek a team approach as appropriate
- Lead when appropriate, mobilizing the group for high performance

There is a growing concern that many young people do not see the direct relevance of what they are learning in school to their needs in later life. The Conference Board of Canada has identified the critical skills, qualities, and abilities that students will require to make a successful transition from school to work. These skills are developed through a variety of life experiences provided by parents, integrated educational approaches in schools, post-secondary institutions, actions that support skill development on the job, and formal and informal opportunities for updating skills throughout life.

RECOMMENDED PROGRAM PATTERNS

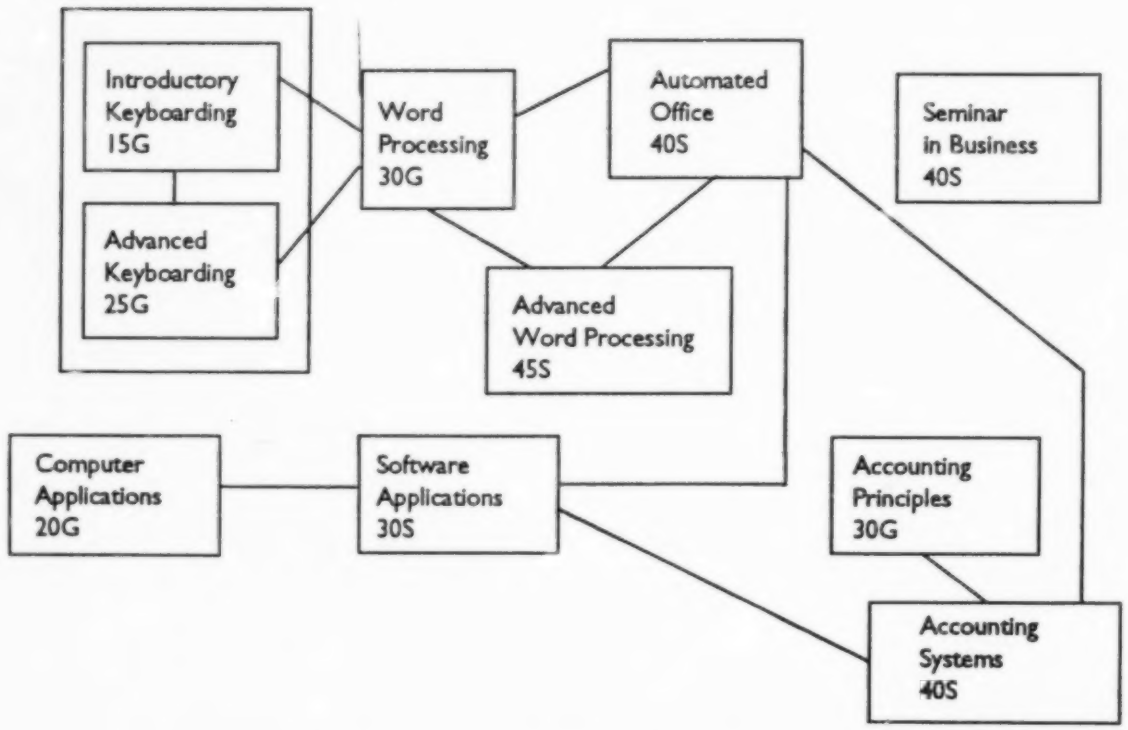
This flowchart is meant to provide schools with a recommended sequence of studies for the new Business Education courses. While the prerequisite to any course is at the discretion of the school, the skill development as shown in the flowchart is recommended. However, it is left to schools to schedule courses and to advise students based upon the educational readiness of individual students.

Exploration of Business 10G/15G*

General Business 20G/25G*
Retailing 20S

Business Principles 30G
Shorthand and Transcription 30S
Promotions 30S
Relations in Business 30S

Economics 40G
Law 40G
Shorthand and Transcription 40S
Management 40S
Marketing Practicum 40S



* Under development

RATIONALE

Software Applications 30S is one of several Senior Years courses which employs computers. Many students have been introduced to the use of computers in the primary and middle grades, through acquisition of keyboarding skills and in many other programs and applications. At the senior level, some students have used computers in mathematics, science, and language arts. Many others will have completed the Senior level keyboarding and word processing courses. Obviously, students will have a wide range of computer knowledge and skills which should be assessed at the onset of **Software Applications 30S**. It is assumed that all students will have acquired keyboarding skills. **Software Applications 30S is appropriate for senior 3 and senior 4 students.**

The initial objective of **Software Applications 30S** is for students to become familiar with the computer's disk operating system (DOS). Those who have already mastered use of the disk operating system will move immediately to subsequent parts of the course. This allows opportunity to master objectives of the following units at higher levels or in more detail. After acquisition of proficiency in DOS, **Software Applications 30S** is designed to promote mastery of

- Electronic spreadsheets
- Use of data base management software
- Manipulation and understanding of an integrated software package
- Use and understanding of data communication systems

Software Applications 30S is specifically designed for students to gain understanding and skill in implementing business software applications. The student who plans to directly enter the workforce in business, government, or industry will gain skill and knowledge in the most commonly used software applications. The student who plans post-secondary education in business will use the acquired skills and knowledge in many courses and programs studied in colleges and universities. **Software Applications 30S** is also used in many non-business subjects such as engineering, social sciences, and various other programs. Spreadsheets, data bases, integrated packages, and data communication are useful to all citizens in personal and business affairs, community work, and other facets of private and public life.

EVALUATION

Software Applications 30S has these key objectives

- Gaining an understanding of the disk operating system
- Development of skill in manipulation of spreadsheets, data bases, and integrated packages

- Growth in understanding of business applications

Evaluation should be based on a combination of

- objective tests of skill and knowledge
- observations of student skills and practice
- completion of assignments and exercises

Evaluation of student achievement should emphasize the level of acquisition of skills and knowledge in applying computer software to business situations and problems.

The basis for evaluation should be included in the course outline distributed to students at the commencement of the course.

Guidelines for Evaluation

Unit 1	Operating System	5%
Unit 2.	Spreadsheets	35%
Unit 3	Data Base	35%
Unit 4	Integrated Package	20%
Unit 5	Data Communications	5%
		100%

TIME ALLOTMENTS

Software Applications 30S is a **full-credit** course that has been developed and approved by Manitoba Education and Training, for vocational purposes. It represents 110-120 hours of instruction.

The following guidelines for time allotments are recommended

UNITS	HOURS
1. Operating System	5 – 10
2. Spreadsheets	40
3. Data Base	40
4. Integrated Package	20 – 25
5. Data Communications	5
	110 – 120

GOALS AND OBJECTIVES

Goals

- To introduce students to a disk operating system
- To provide students with skills in electronic spreadsheet operations
- To have students use various features of the data base program
- To have students integrate information using the data base, spreadsheet and word processor
- To teach students the components and purpose of data communication systems

Objectives

UNIT 1: OPERATING SYSTEM

Computer Operating System

Students should be able to

- explain why the computer needs an operating system
- list and explain the functions that the disk operating system (DOS) must perform for applications programs
- distinguish between internal and external DOS commands
- load the operating system (boot the system)

Default Drive

Students should be able to

- explain what is meant by a default drive
- explain how the default drive and other disk drive names are used in DOS commands
- demonstrate how to shift between drives

Files

Students should be able to

- explain the concept of disk files
- prepare a new diskette for data storage (formatting)
- list files that are stored on a disk
- names files that will be stored on the disks
- copy files that are stored on the disks
- erase files that are stored on the disks

UNIT 2: SPREADSHEETS

Electronic Spreadsheet

Students should be able to

- describe the difference between a manual worksheet and an electronic spreadsheet
- describe the uses of spreadsheets as a business and personal tool

- load and exit the spreadsheet software being used
- explain the different parts of the spreadsheet screen

Menu

Students should be able to

- explain the purpose of a drop down menu or submenu
- illustrate the use of drop down menu or submenu in the spreadsheet package used

Editing Operations

Students should be able to

- use the basic editing operations to set up labels and numeric data, edit and erase cells
- insert and delete columns and rows
- change column widths
- develop formulas to perform the basic calculation operations
- change the formats of numeric cells and the justification of labels
- move and copy single cells to a range of cells
- set up the print range and print spreadsheet cells and cell formulas
- use the file command to save, list and retrieve spreadsheets
- move and copy blocks of cells
- use functions to perform "what if" scenarios
- set up tables and lookup values
- use the windows and title functions
- use the printing options to print spreadsheets with borders, titles
- use the statistical functions for calculations

Graphs

Students should be able to

- develop and print various types of graphs
- use the graph options to develop and print graphs with titles, headings, and legends

UNIT 3: DATA BASE

Data Base Functions

Students should be able to

- define data base and data base management systems
- explain the difference between fields, records and files
- describe the advantages of using data base programs
- load and exit the data base management software being used
- set up the field structure and add records
- use the basic editing functions to modify, add and delete records
- display and print the records
- develop a report form to print the records
- display and print specific records meeting a specific criteria
- sort the records according to a single key
- modify the field structure to add fields
- develop and use input screens to modify or add records
- index the data base using a one field index
- automatically update specific fields in all records
- search for records meeting more than one criteria
- sort the records according to more than one key
- index the data base using multiple indexes
- develop report formats to print the records meeting specific criteria
- develop report formats with grouped records and subtotals
- automatically update records meeting a specific criteria
- print mailing labels

UNIT 4: INTEGRATED PACKAGE

Data Base/Spreadsheet/Word Processor

Students should be able to

- describe the advantages and disadvantages of integrated computer packages
- transfer all records and/or specific records from data base to spreadsheet or word processor
- transfer spreadsheet data to a data base or word processor
- import and export information from various modules to create reports, letters and memos

UNIT 5: DATA COMMUNICATIONS

Data Communications Systems

Students should be able to

- list the advantages of data communications
- describe the components of a data communication system
- explain how data is transmitted over communication links
- list the different types of media used to carry signals sent in data communications
- describe a modem and its function
- describe the difference between analog and digital transmissions
- distinguish between wide area and local area networks
- describe the different configurations of networks used
- list the parts and type of local area networks
- describe the ways users interact with communications software
- explain the importance of data communications standards and protocol
- identify the purpose of data communications systems
- recognize the relationship of accuracy to communication and data communication systems
- describe electronic mail
- describe what is meant by the term facsimile transmission
- discuss security codes, passwords, locks, copyright, computer fraud

SOFTWARE APPLICATIONS 30S

UNIT 1: DISK OPERATING SYSTEMS

GOAL: To introduce students to a disk operating system.

OBJECTIVES	METHODS
1.0 **Computer Operating System** Students should be able to	
1.1 explain why the computer needs an operating system	Explain why the computer needs an operating system. Definition of an operating system is • One or more programs that control and manage the operation of the computer. They interface among the user, the computer and the software programs. Identify some typical operating systems • MS-DOS • PC-DOS • CP/M • Operating System 2 (the newest IBM) • Apple DOS • UNIX

UNIT 1: DISK OPERATING SYSTEMS (CONT.)	
OBJECTIVES	METHODS
1.2 list and explain the functions that the disk operating system (DOS) must perform for applicatio ns programs;	List and explain the functions that the DOS must perform for application programs. Functions of an operating system include • Coordinate or supervise activities and manage files • Decides where programs and data are stored in the computer's memory • Handle communications among computer components, the software and the user The I/O manager coordinates communications to the various parts of the computer. The command processor interprets what is entered on the keyboard or other devices. The operating system contains utility programs that manage files.

UNIT 1: DISK OPERATING SYSTEM (DOS) (CONT.)	
OBJECTIVES	METHODS
1.3 distinguish between internal and external DOS commands	Distinguish between internal and external DOS commands. Explain that internal commands are built into the operating system. They are available whenever the operating system prompt is displayed. They are automatically loaded into the computer's memory whenever you load DOS. They are in a file named COMMAND.COM. Examples are • DIR • COPY • DEL • ERASE • RENAME External commands are stored in separate program files on the DOS disk until they are needed. To use them, a disk, with the necessary utility programs, must be inserted, the utility program name typed and then RETURN pressed. Examples are • FORMAT • CHKDSK
1.4 load the operating system (boot the system)	Load the operating system (boot the system). Discuss and show students the two methods of loading the operating system

UNIT 1: DISK OPERATING SYSTEM (DOS) (CONT.)	
OBJECTIVES	METHODS
	Cold Boot • The computer is turned off and it is then turned on **Warm Boot** • The computer is already on and a reset is performed (reset button or simultaneously depressing CTRL, ALT and DEL).
2.0 **Default Drive** Students should be able to	
2.1 explain what is meant by a default drive	Explain what is meant by a default drive. Point out that most computers have at least two drives. As a result the computer must be commanded which drive or address to use. The default drive is the drive the computer automatically addresses to retrieve and save documents.
2.2 explain how the default drive and other disk drive names are used in DOS commands	Explain how the default drive and other disk drive names are used in DOS commands. Discuss and show how to change the default drive or specify another drive for retrieving or saving a document.

UNIT 1: DISK OPERATING SYSTEM (DOS) (CONT.)	
OBJECTIVES	METHODS
2.3 demonstrate how to shift between drives	Demonstrate how to shift between drives. To change to a different drive, type the letter of the new drive to be used, followed by a colon and then press enter. Example: at the A> type B:
3.0 **Files** Students should be able to 3.1 explain the concept of disk files 3.2 prepare a new diskette for data storage (formatting)	Prepare a new diskette for data storage (formatting). Explain that most disks are designed to be used on a number of computers and that systems use different methods to save files. Therefore, the blank diskettes must be prepared or customized for the particular system being used. This is known as formatting. In order to use a new disk, it must be formatted using the external command FORMAT. A disk that can be used to load both the operating system and an application program is called a self-booting disk or a system disk. The command to format a disk as a system disk is FORMAT/S.

UNIT 1: DISK OPERATING SYSTEM (DOS) (CONT.)	
OBJECTIVES	**METHODS**
3.3 list files that are stored on a disk	List files that are stored on disk. Illustrate how the DIR command is used to display all files stored on a diskette in a particular drive. Example: at the A> type DIR B: to see all files stored on Drive B.
3.4 names files that will be stored on the disks	Name files that will be stored on the disks. Filenames on DOS computers can have up to eight characters and a three character extension. Example: FILENAME.EXT Characters that can be used in file names • Letters A - Z • Numbers 0 - 9 • Characters !@#$%^&*()'-'
3.5 copy files that are stored on the disks	Copy files that are stored on the disks. Describe how to copy one or more files using the COPY command. Explain how to use wildcards to copy groups of files. Example: COPY A:*.* B Explain why disks which are being copied should be write-protected.

UNIT 1: DISK OPERATING SYSTEM (DOS) (CONT.)	
OBJECTIVES	METHODS
3.6 erase files that are stored on the disks	Erase files that are stored on the disks. Describe how to erase unneeded files from a disk using the internal commands ERASE or DEL. Example: ERASE B: FILENAME.EXT Explain what happens to a file that has been erased.

UNIT 2: SPREADSHEETS

GOAL: To provide students with skills in electronic spreadsheet operations.

OBJECTIVES	METHODS
1.0 Electronic Spreadsheet Students should be able to 1.1 describe the difference between a manual worksheet and an electronic spreadsheet 1.2 describe the uses of spreadsheets as a business and personal tool 1.3 load and exit the spreadsheet software being used 1.4 explain the different parts of the spreadsheet screen	For detailed teacher notes and suggested activities please refer to Appendix I.
2.0 Menu Students should be able to 2.1 explain the purpose of a drop down menu or submenu 2.2 illustrate the use of drop down menu or submenu in the spreadsheet package used	

UNIT 2: SPREADSHEETS (CONT.)	
OBJECTIVES	METHODS
3.0 Editing Operations Students should be able to 3.1 use the basic editing operations to set up labels and numeric data, edit and erase cells 3.2 insert and delete columns and rows 3.3 change column widths 3.4 develop formulas to perform the basic calculation operations 3.5 change the formats of numeric cells and the justification of labels 3.6 move and copy single cells to a range of cells 3.7 set up the print range and print spreadsheet cells and cell formulas 3.8 use the file command to save, list and retrieve spreadsheets	

UNIT 2: SPREADSHEETS (CONT.)	
OBJECTIVES	METHODS
3.9 move and copy blocks of cells 3.10 use functions to perform "what if" scenarios 3.11 set up tables and lookup values 3.12 use the windows and title functions 3.13 use the printing options to print spreadsheets with borders, titles 3.14 use the statistical functions for calculations	
4.0 **Graphs** Students should be able to 4.1 develop and print various types of graphs 4.2 use the graph options to develop and print graphs with titles, headings and legends	

UNIT 3: DATA BASE

GOAL: To have students use various features of the data base program.

OBJECTIVES	METHODS
1.0 **Data Base Functions** Students should be able to 1.1 define data base and data base management systems	Define data base and data base management systems. Explain that a data base is one or more files that contain an organized body of information. To create and use a data base, a data base management program/system is used. Identify various data base management programs • Stand-alone programs example: dBase III + • Integrated into other software programs. For example: word processors like WordPerfect and spreadsheets like Lotus 1-2-3 • One of the functions of an integrated program example: Microsoft Works Explain that the way the program stores information on the disk is called the physical storage, while the way the user views the data is called logical storage. The logical storage of files is called the data base model.

UNIT 3: DATA BASE (CONT.)	
OBJECTIVES	METHODS
	Common types of models are • Network • Hierarchical • Relational The type commonly used by data base management programs for the microcomputer are relational. They are called relational because data is organized into tables or relations.
1.2 explain the difference between fields, records and files	Explain the difference between fields, records, and files. Explain that a data base contains files — a file is made up of records and a record is made up of fields. Use the example of a file cabinet (data base) with many file folders (file). Each file has information placed in it (records). There are individual details (fields) that describe a person, thing, or activity listed on the information that is placed in the file folder.
1.3 describe the advantages of using data base programs	Describe the advantages of using data base programs to • Save time — the data is stored so that there is no duplication of data • Allow you to create and access multiple interrelated files
1.4 load and exit the data base management software being used	For the following objectives, see Appendix II for practical activities that can be used to explore and learn about data bases.

UNIT 3: DATA BASE (CONT.)	
OBJECTIVES	METHODS
1.5 set up the field structure and add records	
1.6 use the basic editing functions to modify, add, and delete records	
1.7 display and print the records	
1.8 develop a report form to print the records	
1.9 display and print specific records meeting a specific criteria	
1.10 sort the records according to a single key	
1.11 modify the field structure to add fields	
1.12 develop and use input screens to modify or add records	
1.13 index the data base using a one field index	
1.14 automatically update specific fields in all records	
1.15 search for records meeting more than one criteria	

UNIT 3: DATA BASE (CONT.)	
OBJECTIVES	METHODS
1.16 sort the records according to more than one key 1.17 index the data base using multiple indexes 1.18 develop report formats to print the records meeting specific criteria 1.19 develop report formats with grouped records and subtotals 1.20 automatically update records meeting a specific criteria 1.21 print mailing labels	

UNIT 4: INTEGRATED PACKAGE

GOAL: To have students integrate information using the data base, spreadsheet and word processor.

OBJECTIVES	METHODS
1.0 **Data Base/Spreadsheet/ Word Processor** Students should be able to 1.1 describe the advantages and disadvantages of integrated computer packages 1.2 transfer all records and specific records from data base to spreadsheet or word processor 1.3 transfer spreadsheet data to a data base or word processor 1.4 import and export information from various modules to create reports, letters and memos	

UNIT 5: DATA COMMUNICATIONS

GOAL: To teach students the components and purpose of data communication systems.

OBJECTIVES	METHODS
1.0 **Data Communications Systems** Students should be able to 1.1 list the advantages of data communications 1.2 describe the components of a data communication system 1.3 explain how data is transmitted over communication links 1.4 list the different types of media used to carry signals sent in data communications 1.5 describe a modem and its function 1.6 describe the difference between analog and digital transmissions 1.7 distinguish between wide area and local area networks 1.8 describe the different configurations of networks used 1.9 list the parts and type of local area networks	

UNIT 5: DATA COMMUNICATIONS (CONT.)	
OBJECTIVES	**METHODS**
1.10 describe the ways users interact with communications software 1.11 explain the importance of data communications standards and protocol 1.12 identify the purpose of data communications systems 1.13 recognize the relationship of accuracy to communication and data communication systems 1.14 describe electronic mail 1.15 describe what is meant by the term facsimile transmission 1.16 discuss security codes, passwords, locks, copyright, computer fraud	

APPENDIX I

The following are examples of spreadsheets.

1. Set up a proposed budget for

   - School where attending
   - School division where situated
   - Student council of current school
   - Athletic department where attending
   - Any club(s)
   - Hockey team or any school or local team
   - A fund-raising project

   Students produce formulas to calculate percentage increases and decreases from period to period. These columns are added to the worksheet as they are developed.

   Students present formulas to show forecast figures based on different possibilities. These are added to the worksheet as developed.

2. Students set up a template for calculating salespersons' commissions, then set up a data base of salespersons' commissions and sort the data base and search for specific records in the data base.

3. Set up a spreadsheet to produce a payroll register. Look-up functions can be used for federal income taxes and other deductions.

4. Set up an inventory listing with headings for **unit costs**, **quantity on hand** and **product price code**.

   - set up columns for **markup rate** (it differs according to codes 1 - 3). Also set up a column for **unit selling price**.

     Note: Code 1 30% markup
     Code 2 35% markup
     Code 3 40% markup

   - set up a column **gross profit if all sold**, to calculate the gross profit if all the products are sold.

   - add a column for **discounts** awarded for various amounts spent for the various codes. Discounts are based on the dollar amount of prices of items sold and are given in the problem.

- set up a column for **selling price** after the discount is taken.
- set up cells with headings to calculate average cost prices and average selling prices for some or all of the products.
- print/graph as desired.

5. Lloyd D. Brooks, **101 Spreadsheet Exercises** (Gregg Division of McGraw-Hill Book Company ISBN-0-07-008135-2) has many excellent exercises, progressing in complexity and difficulty. Many of the exercises build on previous worksheets prepared for earlier assignments. The exercises often require students to write out formulas which they are using in the spreadsheet. This seems to be a good feature in that it helps students to organize their work and it also produces a record of formulas used.

6. Prepare a spreadsheet listing students in any class (NOT colleagues) and give grades on the first three tests. Teacher provides the grid.

7. Recall question 6 above and enter formulas to calculate averages for each students.

8. For staff-need projections, prepare a spreadsheet which analyzes customer traffic. Survey is made showing customer counts during the hours: 10-11, 11-12, 12-1 and 1-2. Data for several branches is given and students are to present this in a spreadsheet for which the teacher will supply the grid.

9. Prepare a spreadsheet listing personal income and expenses for weeks 1 and 2. Income is $25 from allowance with $40 plus tips from a weekend job. Expenses include lunches, gas and entertainment. Teacher provides the grid.

10. Plan a payroll on a given grill with this information

    Names Exemptions Hours Pay Rate CPP UIC Income Tax Net Pay

11. Prepare a weekly commission report where employees earn a commission of 5% of weekly sales.

    Employee Weekly Sales Sales

    Required: Plan a spreadsheet on a grid provided by the teacher, using appropriate titles.

Find: Commission Earned
Total Earnings
Totals of Columns
Average Commission Earned

12. Prepare a spreadsheet to summarize salesperson travel expenses. Company policy is to pay salespeople for the use of their cars at 30 cents per km for the first 1,000 kms and 20 cents per km for distances over 1,000 kms.

Required: Automobile expense for each person
(HINT: use an IF statement)
Totals for each expense
Totals for each salesperson
Highest automobile expense
Lowest automobile expense
Average automobile expense

Give students a facsimile of expense reports

CAL MURPHY COMPANY
Expense Reimbursement Request

Salesperson's Name _____

Automobile (kms) _____

Hotel _____

Food _____

Client Entertainment _____

Airfare _____

Date _____

(The above may be reproduced and then reduced in size so that reports for many different salespersonnel can appear on one or two pages.)

13. Collect Toronto (or Canadian or Vancouver) stock exchange listings for a week at the start of the term and have students choose a number of shares to buy with a given amount of money. An example of a spreadsheet follows

		A	B	C	D	E	F
1							
2	Stock Exchange Analysis, January 31, 1990						
3	Stock Name	Dec. 31 Quantity Purch.	Dec. 31 Cost per Share	Total Cost	Curnt. Market Value	Gain (Loss)	% of Prof.
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							

24	January Weekly Closings						
25	Stock Name	Week 1	Week 2	Week 3	Week 4	Totals	Month Ave.
26							
27							
28							
29							
30							
etc							

This information can now be used to present

- PIE CHART representing portion each stock represents
- LINE and BAR graph showing weekly closings for January
- BAR graph showing gains and losses for 4 or 5 stocks.

14. Prepare graphs to display information regarding sales staff travel expenses prepared in exercise 12.

    - PIE CHART, BAR, LINE and STACKED BAR* showing each person's travel expenses.

    * STACKED BAR graph would be prepared for each person to show a comparative picture of each person's relative expenses.

15. Many accounting reports, entries and statements may be executed using a spreadsheet as presented by Brother and Rosen, **Accounting Applications for Spreadsheets**, published by Dictation Disc Company (No ISBN is evident).

16. **Lotus 1-2-3 Release 2.2 for Accounting**, Canadian Edition, Michelman and Conrod (published by Course Technology) combines Accounting and Lotus 1-2-3 instruction for college/university level students.

    ISBN 1-878748-02-5 {5¼ inch disk (Canadian)}
    ISBN 1-878748-03-3 {3½ inch disk (Canadian)}

17. Other ideas for spreadsheet use are

- sports statistics — school, local, national
- pop music — local radio station requests and plays
- cost of living trends/reports
- various makes of cars/motorcycles, bicycles sold
- high school graduation statistics
- success rates of local school graduates at college/universities

APPENDIX II

The following is a guide of practical activities that can be used to explore and learn about data bases.

- Mailing list of customer names and address
- Retail inventory system
- Assets i.e. stock portfolios
- An "address book"
- A chequing account record
- An equipment inventory
  - books
  - records, tapes, CD's
  - household belongings
  - athletic equipment for the Physical Education department
  - textbooks, typewriters, computers, adding machines, etc., for the Business Education department
- School store inventory
- Market surveys information/results
- Library card catalog
- Yearbook sponsorship records (of businesses buying yearbook space)
- Graduation information

BIBLIOGRAPHY

Note: Refer to the current Manitoba Textbook Bureau Catalogue for additional texts and resources.

TEXTS

Brother and Rosen. **Accounting Applications for Spreadsheets.** Dictation Disc Company.

Capron and Duffy. **Using Microcomputers: A Complete Introduction.** AW, 1989.
Text includes educational versions of WordPerfect 4.2 B/C GoldSpread and dBase III Plus.
Instructor's Guide.
Lab Manual.
Test Bank.

Curtin and Porter. **Microcomputers — Software and Applications.** Second edition. PH, 1989.
Student Resource Manual including Educational versions of the following MS-Dos software —
WordPerfect 4.2, TWIN, dBase III plus ProComm.
Student Exercise Disk containing templates in WordPerfect, TWIN/1-2-3 and dBase III plus.
Instructor's Resource Manual.
Test Item File — hard copy and/or floppy.
Colour Transparencies.

Curtin, Dennis. **Application Software (MS-DOS).** Second edition. PH, 1990.
Instructor's Resource Manual, Resource Disk, Transparencies and Videos are free from publisher upon adoption.

Duffy, T. **Four Software Tools Plus — Applications and Concepts (WordPerfect 4.2 and 5.0, Lotus 1-2-3 (release 2.01), dBase III Plus, PC-DOS).**
Educational versions of WordPerfect 4.2, VP Planner Plus, dBase III Plus.
Instructor's Manual (includes lecture outline, transparency masters and solutions disk).
Computerized test generator.

Lloyd D. Brooks. **101 Spreadsheet Exercises.** Gregg Division of McGraw-Hill Book Company. ISBN -0-07-008135-2.

Michelman and Conrad. **Lotus 1-2-3 Release 2.2 for Accounting.** Canadian edition. Course Technology.
ISBN 1-878748-02-5 {5¼ inch disk (Canadian)}
ISBN 1-878748-03-3 {3½ inch disk (Canadian)}

Michelman and Conrad. **Lotus 1-2-3 Release 2.3 for Accounting.** Canadian edition. Course Technology.
ISBN 1-878748-02-5 {5¼ inch disk (Canadian)}
ISBN 1-878748-03-3 {3½ inch disk (Canadian)}

Presley and Freitas. **An Introduction to Computing Using Microsoft Works, PC Version 3.0.** Lawrenceville Press Inc., P.O. Box 704E, Pennington, NJ. 1993. (1-609-737-1148; FAX 1-609-737-8564).
An Introduction to Computing using Macintosh Works, Version 3.0, 1993.
An Introduction to Computing using Claris Works, 1993.

Popyk, et al. **Up and Running! Microcomputer Applications.** AW, 1988.
Teacher's Manual.
Transparency Masters.
Test Bank.
Educational versions of WordPerfect 4.2, Wordstar 3.3, dBase III plus and Preview II (an on-line tutorial) are available to users of this text.

Shelly and Cashman. **Computer Fundamentals with Application Software.** NE, 1986.
Workbook and Study Guide.
Learning to Use Instructor's Manual.
Instructor's Manual.
Study Guide and Instructor's Manual.
Transparency Masters.
Learning to use Test Bank.
Test Bank.
Software packages — Education version —
Supercalc 3 and Wordstar 3.3.
Computer Test Bank.

Shelly, et al. **Computer Concepts with Microcomputer Applications.** NE, 1990.
Lotus Version (WordPerfect, Lotus, dBase III Plus).
Instructor's Manual (includes Lesson Plans, Answers, Solutions).
Test Bank Booklet.
Transparency Masters.

Sullivan, Lewis and Cook. **Computing Today**. HM, 1988.
Instructor's manual — includes test bank and lab assignments.
Microtests — Apple and IBM.
Micro Concepts and Applications.
Instructor's Manual.

APPLICATION PROGRAMS — EDUCATIONAL VERSIONS

Metzelaar and Fox. **Using dBase III Plus** (with educational version of software). AW, 1987.
Requires IBM-PC or compatible two drives and 256K memory.

Microsoft Works — Full Version — An Integrated package containing word processing, data base management, spreadsheet with graphics and telecommunications.
Optional equipment: Microsoft mouse and Hayes compatible modem.
Available versions: MS-DOS (requires DOS 2.0 or higher and 384K memory); 5¼" diskette (requires one disk drive 720K) and MacIntosh version.
Order direct from Educational Technology Program
1970 Ness Avenue —
MS-DOS 5¼" (version 2.0) Package — Stock No. 71001.
MS-DOS 3½" (version 2.0) Package — Stock No. 71002.
MacIntosh 3½" (version 2.0) Package — Stock No. 71003.
MS-DOS 5¼" French (version 1.05) Package —
Stock No. 71004.
MS-DOS 3½" French (version 2.0) Package —
Stock No. 71005.
MacIntosh 3½" French (version 1.1) Package —
Stock No. 71006.

O'Leary, T. **The Student Edition of Lotus 1-2-3 release 2.2**. (textbook and software).
Second edition. AW, 1989.
Specify 5¼" or 3½" disk).
Instructor's Manual.

Sachs and Kronstadt. **Discovering Microsoft Works for the IBM Personal Computer**. WI, 1989.
Order direct from Educational Technology Program
1970 Ness Avenue —
Text and diskette (5¼") — Stock No. 49590.
(3½") — Stock No. 49591.
Teacher's Manual with Transparencies.
Lab Manual and Projects.
Requires 384K and Dos 2.0+.

Stone. **PC Apprentice: dBase III Plus.** (workbook). PH, 1988.
Teacher's edition (text and diskettes).

The Student Edition of dBase IV. AW, 1989.
Specify 5¼" or 3½" disk.
Instructor's Manual.

TEXTUAL RESOURCES AND COURSEWARE — SPREADSHEETS

Brooks. **101 Spreadsheet Exercises.** MMC, 1987.
Teacher's Manual and Key.

Keiko and Pitter. **Using Lotus 1-2-3 — Release 2.2.** MH, 1990.

Krumm. **Learning Lotus 1-2-3 for Business.** AW.

Latif. **Lotus 1-2-3 for Beginners.** PH, 1988.

Metzelaar and Fox. **Learning to Use Lotus 1-2-3.** AW, 1987.

Murphy and Potter. **Getting Started with Lotus 1-2-3 release 2.2.** WI, 1991.

TEXTUAL RESOURCES AND COURSEWARE — DATA BASE

Arnold, et al. **Getting Started with dBase III Plus Extended.** WI, 1991.

Blanc and Hildebrandt. **Database.** MON, 1988.
Teacher's Manual.

Shuman, J. **Using dBase IV.** MH, 1990.

Stewart, et al. **101 Database Exercises.** MMC, 1987.
Teacher's Manual and Key.

TEXTUAL RESOURCES AND COURSEWARE — INTEGRATED

Fitzsimmons. **Introducing MS Works (IBM Version).** PH, 1991.

Pasewark, et al. **Microsoft Works, Tutorial and Applications (IBM Version).** NE, 1991.
Teacher's Manual.

Sach, et al. **Discovering Microsoft Works for IBM Projects, Applications and Exercises.** WI, 1989.